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Mycena variicystis, a new spinose species from Phru Toh Daeng Peat Swamp in Thailand

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Abstract — *Mycena variicystis* is described as a new species collected from a peat swamp forest at Chaloem Phrakiat Somdet Phra Thep Wildlife Sanctuary-Phru Toh Daeng Peat Swamp in southern Thailand. A comprehensive description and illustrations are provided.

Key words — taxonomy, *Basidiomycota*, *Mycenaceae*

Introduction

Eleven spinose species of *Mycena* were reported worldwide by Desjardin et al. (2002) and accepted as members of *Mycena* section *Longisetae*. They were tentatively placed in two stirps: stirps *Brunneisetosa,* including *M. brunneisetosa* Corner, *M. indica* Manim. & Leelav., and *M. tenuisetosa* Corner, *M. trichocephala* Singer and stirps *Longiseta,* including *M. aciculata* (A.H. Sm.) Desjardin & E. Horak, *M. breviseta* Höhn., *M. brevisetosa* Corner, *M. clavulifera* (Berk. & Broome) Sacc., *M. khonkhem* Desjardin et al., *M. longiseta* Höhn., and *M. palmicola* Desjardin et al. *Mycena palmicola* and *M. khonkhem* were described as new while *M. clavulifera* was redescribed based on material collected in Thailand. During the course of preparing a monograph of spinose species of *Mycena* from Southeast Asia, one new species was discovered in Thailand that is described formally below. The new species is characterized by cheilocystidia with few, long, apical appendages (unique in the section), thin-walled and non exudative pileocystidia, and an absence of caulocystidia.

Material and Methods

All measurements and colours reported for microscopic feature were made from dried material, rehydrated in 100% ethanol followed by distilled water,

3% KOH or Melzer's reagent. Spore statistics include: x, the arithmetic mean of the spore length by spore width (± SD) for n spores measured in a single sample (specimen); Q, the quotient of spore length and spore width in any one spore, indicated as a range of variation in n spores measured; Qm the mean of Q values where more than one specimen was available.

Taxonomy

Mycena variicystis Boonprat., **sp. nov.** Figs. 1–6

MycoBank 513212

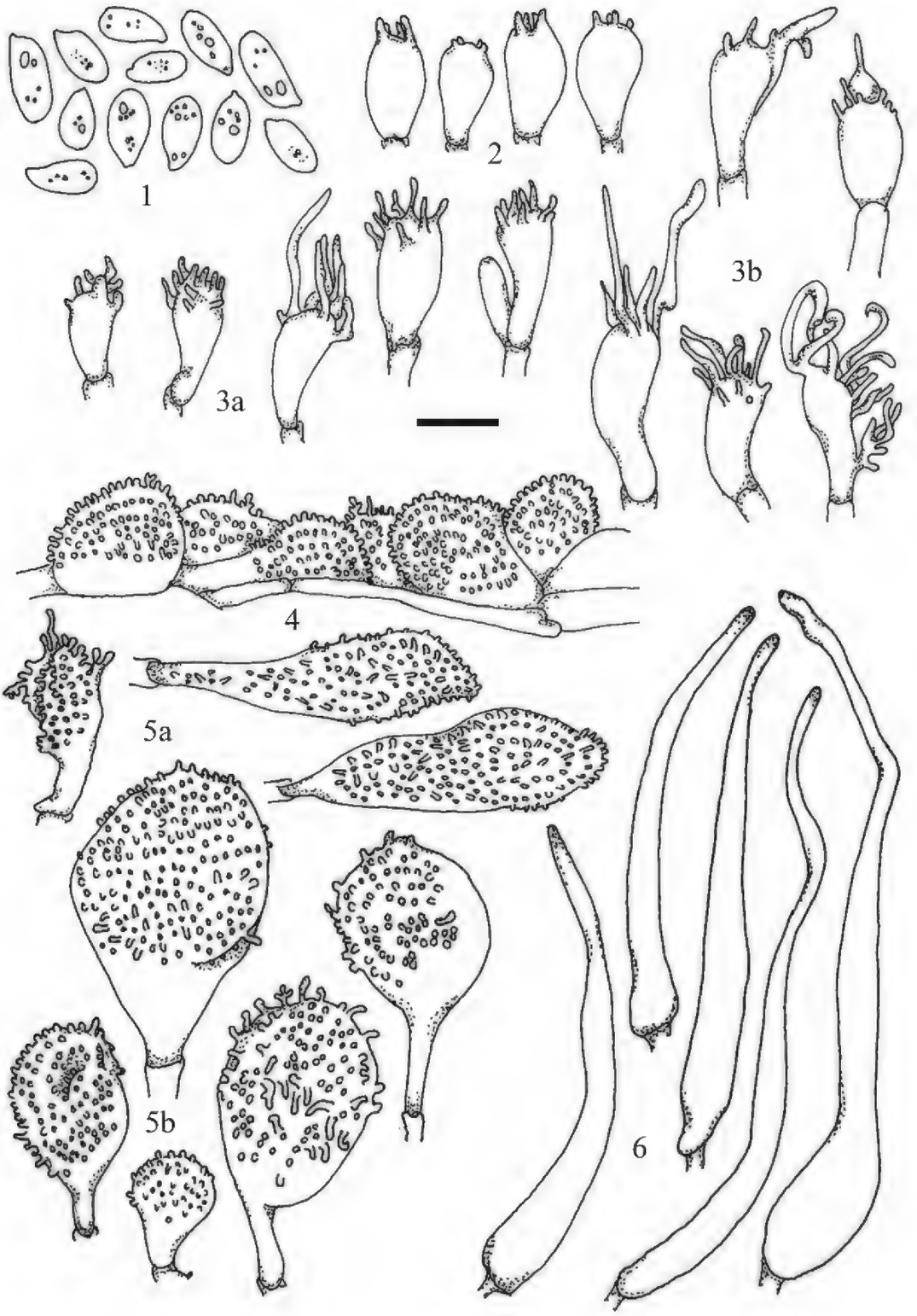
Pileus 1.0–4.5 mm, convexus dein plano-convexus, striatus, albidus, brunneolus centro, hispidulus. Lamellae adnatae, angustae collariatae, distantes, latae, albae. Stipes 5.0–15.0 × 0.2 mm, ubiqe albus, ad basim pruinoso-discoideus. Basidiosporae 8–12(–15)×4–5.6 µm, elliposoideae, leves, hyalinae, amyloideae. Basidia 4-spora, clavata. Basidiola clavata. Pleurocystidia nulla. Cheilocystidia 20–30(–35) × (5–)7–11 µm, clavata, apicalis appendix, hyalinae, inamyloideae; appendiculae 4–12× 1–1.5 µm, irregularis appendix, cylindricus. Hyphae pileipellis 8–15 µm latae, cylindraceae, haud gelatinosae, spinulosus; cellulae apicales ex acanthocystis 20–35 × 10–30 µm, late clavatis vel sphaeropedunculatis, spinulosi. Spinulae cylindraceae 0.5–2.5 × 0.5–1 µm dense instructae. Pileocystidia 56–92 × 4–10 µm, ex clavata, aciculalis, late basis, tenuitunicatis. Trama pilei 7–20 µm latae, cylindraceae, haud gelatinosae, hyalinae, dextrinoidae, haud gelatinosae. Trama hyphae et corticales tipitis lamellarum ex hyphis dextrinoideis compositum, haud gelatinosae. Caulocystidia nulla. Ad folia dejecta. Thailandia. Holotypus: BBH1888.

Etymology – *varie-* (Latin) = variously; *-cystis* (Latin) = cell; referring to the various types of cystidia present in the species.

Type – THAILAND, Narathiwat, Chaloem Phrakiat Somdet Phra Thep Wildlife Sanctuary-Phru Toh Daeng Peat Swamp, trail along the wood bridge, 14 Feb. 2001, T. Boonpratuang 176 (**Holotype**: BBH1888; Isotype: SFSU).

Pileus 1.0–4.5 mm diam., convex to plano-convex with a flattened disc, margin inflexed, striate; surface dry, rugulose, hispid; disc pale brown, margin cream-coloured. Context < 0.5 mm thick. Odor not distinctive; taste unknown. Lamellae adnate to a pseudocollarium, distant (10–12) with 2 series of lamellulae, broad, thin, white. Stipe 5.0–15.0 × 0.2 mm, central, cylindrical, equal, arising from a small basal disc, fragile, dry, glabrous, white to cream-coloured.

Basidiospores (Fig. 1) 8–12(–15) × 4–5.6(–7) µm [x = 9.0 ± 0.9 × 4.4 ± 0.5 µm, Q = 1.4–3, Qm = 2.08 ± 0.11; n = 25 spores], ellipsoid, smooth, hyaline, distinctly amyloid, thin-walled. Basidia (Fig. 2) 18–20 × 10–15 µm, broadly clavate, 4-sterigmate. Basidioles clavate. Pleurocystidia absent. Cheilocystidia (Fig. 3a–b) abundant, lamellae edge sterile, 20–30(–35) × (5–)7–11 µm, clavate, with few to numerous apical appendages, hyaline to pale yellow, inamyloid, thin-walled; apical appendages 4–12 × 1–1.5 µm, irregularly cylindrical. Pileipellis (Fig. 4) a hymeniform layer of acanthocysts when young, becoming a cutis of repent hyphae with acanthocyst terminal cells in age, with scattered pileocystidia; hyphae 8–15 µm diam, densely spinulose, hyaline,



FIGURES 1–6 *Mycena variicystis*, holotype BBH1888.
1. Basidiospores, 2. Basidia, 3a–b. Cheilocystidia, 4. Pileipellis with acanthocysts, 5a–b. Acanthocysts, 6. Pileocystidia. Bar = 10 μm.

inamyloid, thin-walled, non-gelatinous. Acanthocysts (Fig. 5a–b) 20–35 × 10–30 µm, broadly clavate to sphaeropedunculate, densely spinulose, hyaline to pale yellowish brown, inamyloid, thin-walled; spinulae 0.5–2.5 × 0.5–1 µm, cylindrical. Pileocystidia (Fig. 6) scattered, simple, 56–92 × 4–10 µm, acicular, often with an enlarged base and gradually narrowed upwards to an acute apex, smooth, hyaline, inamyloid, thin-walled. Hypodermium not differentiated. Pileus trama composed of loosely arranged hyphae 7–20 µm diam., cylindrical, smooth, hyaline, strongly dextrinoid, non-gelatinous. Lamellar trama hyphae dextrinoid. Stipitipellis a cutis of repent hyphae. Stipe tissue monomitic; cortical and medullary hyphae parallel, cylindrical, hyaline, strongly dextrinoid, thin-walled, non-gelatinous. Caulocystidia absent. Clamp connections present but not at every septum.

Habit, habitat and known distribution. Solitary to scattered, lignicolous on bark of undetermined dicotyledonous tree in mixed forest. Thailand..

Commentary: *Mycena variicystis* is the only known spinose *Mycena* species with cheilocystidia that have few, long apical appendages. Eleven species in sect. *Longisetae* lack cheilocystidia, while most others have cheilocystidia covered with short, rod-like spinulae. The thin-walled pileocystidia are also unusual in sect. *Longisetae*, suggesting that the new species may belong elsewhere in *Mycena*. However there is no existing section of *Mycena* that would accommodate a species with its unusual combination of characters. Thus, in the interim, the best solution is to include it as a tentative member of sect. *Longisetae* until more information is obtained.

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